HIV/Hepatitis C (HCV) Co-infection

Kenneth Skahan, MD
University of Cincinnati Infectious Diseases Center and Liver Clinic

Fact about Hepatitis C Infection

- caused HCV - formerly known as "non-A, non-B hepatitis"
- identified in late 1980's; single drug therapy began around 1990 (interferon)
- blood-borne virus

Fact about Hepatitis C Infection

- In the US
  - 1 million people with HIV
  - 4 million with HCV
  - 300,000 with both
- 85% infected with HCV develop chronic hepatitis
- 15% clear virus spontaneously within a few months of infection

Natural History of Hepatitis C Infection

- 40% never progress
- 20% of chronically infected persons develop cirrhosis over 10-30 years
- 40% progress to cirrhosis over 40-50 years

Natural History of Hepatitis C Infection

- Liver cancer (hepatocellular carcinoma) risk increases 1- 3%/yr after the development of cirrhosis
- After 5 years, the risk may be a much as 15%)

Risk Factors for Hepatitis C Infection

- IV drug use/sharing needles and paraphernalia
- Blood/blood product transfusion before July 1992
- Sharing straws for snorting cocaine, methamphetamine, etc
- Transmission from mother to child during pregnancy/birth (vertical transmission)

Risk Factors for Hepatitis C Infection

- Sexual intercourse with a infected person (not as common as with HIV or Hepatitis B)
- Tattooing/piercing unclean needles
- Sharing razors/toothbrushes with an infected person
- Needle stick accident with a patient with HCV

Laboratory Diagnosis and Monitoring

- HCV antibody (Elisa) test to screen
- HCV RIBA antibody test for confirmation
  - With HIV/AIDS these may give "false negative" results; If you suspect HCV infection, consider ordering an HCV viral load assay
- HCV viral load, HCV genotype (viral strain-1, 2 or 3 with subtypes)

Laboratory Diagnosis and Monitoring

- Liver function tests
  - (ALT, AST, alk phos, bilirubin, albumin) platelets, PT/INR.
- Check hepatitis A and B serology & vaccinate those who have not been exposed.

Laboratory Diagnosis and Monitoring

- Rule-out other causes of liver disease
  - Medications
  - drugs
  - auto-immune disease
  - Hemachrornotosis
  - alpha-1 anti-trypsin disease
  - chronic hepatitis B infection, etc

Laboratory Diagnosis and Monitoring

- Liver ultrasound and alpha-feto protein (AFP) to check for liver cancer (yearly)
- Liver biopsy (to assess suitability for treatment, and to confirm diagnosis when in doubt)

Predictors (Prior to Therapy) of a Good Response to HCV Therapy

- HCV viral load <2 million
- Genotype 2 or 3 (vs. Genotype 1)
- Persons with minimal disease on liver biopsy, and no significant cirrhosis
- Women vs. Men
  - Especially those <40 years

Predictors of a Good Response to HCV Therapy Prior to Therapy

- Minimal or no alcohol, or other liver toxins
- Persons not overweight
- Excellent compliance with therapy & follow-up
- Able to tolerate full treatment doses
- Decreased fats in diet
  - Leads to fat deposition in the liver

HIV/HCV Co-infection

- 60-90% of persons with HIV through IVDU also have contracted HCV
- Most actively treated hemophiliacs treated before 1985 have HIV, & HCV if treated before 1988

HIV/HCV Co-Infection

- HCV more easily transmitted than HIV through non-sexual means
- HCV progression may be as much as 2-5X faster in persons co-infected with untreated HIV
  - HIV control may slow this progression
- HCV may accelerate HIV progression in some individuals

Treatment for HCV

- First treatment course = best chance for a lasting response
- Current "standard of therapy" =
  - Ribaviron -oral, daily &
  - PEGYLATED interferon - weekly subcutaneous injections (non-pegylated interferon has a shorter ½ life, requiring more freq. injections)

Treatment for HCV

- Common side effects of pegylated interferon:
  - Flu-like symptoms, depression, fatigue, neutropenia, thrombocytopenia, hypothyroidisrn, exacerbation of auto-immune disorders, urticaria, insomnia, headaches, anorexia
  - May require adjunctive treatment or dose reduction

Treatment for HCV

- Common side effects with ribaviron:
  - Anemia (usually early on)
  - May also require adjunctive therapy (EPO) or dose reduction
  - NOTE: should NOT be use in patents with CrCl<50, or in pregnant women - teratogenic

Treatment for HCV

If treatment is "successful" after 12 weeks with an "undetectable" HCV viral load then

- Persons with genotypes 1 continue for a total of 48 weeks
- Persons with genotypes 2 or 3 continue for a total of 24 weeks

Treatment for HCV

- "In remission" - if HCV viral loads undetectable at end of treatment course
- "Sustained Viralogic Response" (SVR) if undetectable at 6 months
- Also see algorithm for treatment course attached
- Liver transplantation for end-stage liver disease (ESRD) with med. decompensations

HIV's Effect on HCV Therapeutic Response?

(and vice versa)

- HCV patents co-infected with HIV
  - more likely to develop lipodystrophy body changes
  - increased lipids
  - insulin resistance with increased glucose due to liver damage

HIV's Effect on HCV Therapeutic Response?

- HIV drugs may stress or be too toxic for the liver causing damage:
  - protease inhibitors via metabolism & breakdown
  - AZT & d4t via mitochondrial toxicity

HIV's Effect on HCV Therapeutic Response?

Better Predictors of HCV Responses

- Low HIV viral loads (ideally undetectable)
- higher CD4 counts (especially over 500)
- No other co-existing HIV conditions requiring treatment

Treatments Issues

- Control HIV first or HCV? – Unclear
  - Usually treat the more pressing problem first
  - Interferon (HCV treatment) can cause
    - immune activation
    - increased HIV viral loads

HIV/HCV Co-infection

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- HCV may accelerate HIV progression in some individuals

Special Challenges for Correctional Facilities & Inmates

- Illicit drug use, non-sterile IV needle sharing & unprotected sex between inmates
- Lack of information/knowledge of risk
- Lack of screening for HCV – expensive therapy not available

Special Challenges for Correctional Facilities & Inmates

- Lack of confidentiality (inmate line-up for meds)
- Lacking partnerships with regional medical facilities with experts in HCV

Special Challenges for Correctional Facilities & Inmates

- Crowding and under-budgeted
- Mistrust of inmates of medical personnel
- Meds make you feel bad
- Long waits in line for inmates to get daily meds - esp. when they aren't feeling well or weak

Improve Chances of Doing Well for HIV/HCV Co-Infected Persons

- Avoid alcohol, illicit drugs, unneeded medications (esp. ones with liver toxicities)
- Join a recovery program for substance abuse
- Attend AA/NA meetings, get a sponsor, begin 12-step program

Improve Chances of Doing Well for HIV/HCV Co-Infected Persons

- Eat healthy!
- Drink adequate amounts of water (8-10 glasses) daily
- Broccoli, cabbage, brussels sprouts (rich in sulfur compounds - aid in liver detoxification)
- Eggs (high in protein & aids with detox.)

Improve Chances of Doing Well for HIV/HCV Co-Infected Persons

- Beets, carrots, dark leafy greens (anti-oxidants & flavonoids)
- Papaya, melons, berries (anti-oxidants & flavonoids)
- Walnuts, fish (omego-3-fatty acids)
- Milk thistle? - May reduce liver inflammation

Improve Chances of Doing Well for HIV/HCV Co-Infected Persons

- Follow-up regularly with an HIV specialist
- Start meds when indicated and ready
- Ask for a referral to a liver specialist (hepatologist) to help monitor HCV, & together decide when when to start treatment

Improve Chances of Doing Well for HIV/HCV Co-Infected Persons

- Get vaccinated against Hepatitis A & B if not previously exposed based on lab tests
- Get help in dealing with depression if it is a problem, & especially if considering HCV therapy

Improve Chances of Doing Well for HIV/HCV Co-Infected Persons

- Join a hepatitis support group
- Web surf for information about HIV/HCV to stay current
- Contact local Health Department
- Research protocols may offer additional options for treatment

Advances & Hope

- Newer, easier-to-use pre-filled pegylated interferon syringes
- Upcoming HIV/HCV treatment research studies to find out how to optimized therapy
- Explore reimbursement options

Advances & Hope

- Increased interest within the medical community for treating persons with HIV/HCV co-infection –
- Persons with HIV living longer, doing better
- Transplantation is now a viable possibility

Current Treatments for HCV Infection (& evolving . . .)

- Peg-IFN alfa-2b 1.5 ug/kg or Peg-IFN alfa 2a 180 mcg sq

Plus

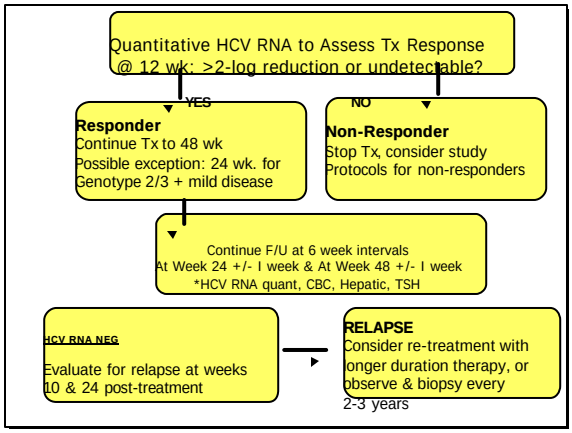
- Ribavirin 1000mg 400 qAM, 600 qPM) or 1200 mg (600 mg. Bid)
- Use lower dose if body weight <75 kg

Monitor Throughout Tx

- Encourage strict adherence
- Follow up 2 weeks after start (CBC, Hepatic)
- Discuss side-effect management
- Discuss expectations for sustained long-term HCV control

Monitoring HCV Therapy

- 4 week follow-up or later unless adverse events present
- 6 week follow-up later
- 12 week follow-up for HCV viral load & continuation decision
- At each visit CBC, hepatic, renal



Advanced Liver Disease

- Patients with cirrhosis should be monitored regularly with AFP/ultrasound for HCC
- Patients with hepatic de-compensation should be referred for liver transplant

Tx for Advanced Liver Disease

- Contraindications:
  - Hypersensitivity
  - Auto-immune disease
  - Decompensation
  - Pregnancy
  - Hemoglobinopathy
  - Active opportunistic infections

Tx for Advanced Liver Disease

- Relative contraindications:
  - Sever psychiatric disorder
  - Coronary artery disease
  - Pancreatitis
  - Uncontrolled diabetes
  - Uncontrolled seizure disorder

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For More Information:

Cincinnati STD/HIV Prevention Training Center

Toll Free

1-800-459-2820

HIV/Hepatitis C (HCV) Co-infection

Fax:

Cincinnati STD/HIV Prevention Training Center

1-513-357-7306

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